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Expectancy of Heavy Winter Rainfall - WALES

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Long term records of 15 rainfall stations in Wales were examined to determine the probable heaviest falls in 1 year, 2 years, 10 years over 1 & 5 days. Rainfall in millimetres. Period November - April.

Results

Area	No. of Stations	Mean Annual Rainfall	Heaviest falls in 1 day			Heaviest falls in 5 days		
			1 year	2 years	10 years	1 year	2 years	10 years
S. Wales	5	1096	30.2	35.4	46.4	64.0	72.0	90.0
W. Wales	5	1154	28.8	33.0	42.0	59.0	68.0	85.2
N. Wales	5	975	25.2	28.8	38.4	52.8	62.2	75.8

Combining and re-analysing:

Rainfall Range	No. of Stations	Mean Annual Rainfall	Heaviest falls in 1 day			Heaviest falls in 5 days		
			1 year	2 years	10 years	1 year	2 years	10 years
Below 1000	2	715	20.0	23.0	32.5	41.0	48.0	61.0
1000 - 1080	5	1054	26.6	30.8	40.2	55.2	64.0	78.4
1080 - 1160	5	1109	30.2	35.6	46.2	63.2	72.0	86.2
above 1160	3	1293	32.3	36.0	45.7	68.3	78.3	96.7

These results can be smoothed for the area: corrections can be used for the three areas:-

Average Annual Rainfall	Heaviest Falls in 1 day			Heaviest Falls in 5 days		
	1 year	2 years	10 years	1 year	2 years	10 years
700	19.7	23.1	32.6	40.5	47.1	59.3
750	20.8	24.3	33.8	42.9	49.8	62.4
800	21.9	25.5	35.1	45.3	52.5	65.5
850	23.0	26.7	36.3	47.7	55.2	68.6
900	24.1	27.9	37.6	50.1	57.9	71.7
950	25.2	29.1	38.8	52.5	60.6	74.8
1000	26.3	30.3	40.1	54.9	63.3	77.9
1050	27.4	31.5	41.3	57.3	66.0	81.0
1100	28.5	32.7	42.6	59.7	68.7	84.1
Area Corrections						
S. Wales	+1.8	+1.8	+3.9	+4.5	+3.5	+6.1
W. Wales	-0.9	-1.0	-1.9	-3.3	-3.6	-2.2
N. Wales	-0.6	-0.9	-1.1	-0.9	+0.3	+0.4

Although limited in accuracy by the limited number of stations, these corrections appear reasonably consistent.

Any comments or suggestions on this paper should be referred to the author.

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